

Central Roanoke Mobility Study I-581/220 Expressway Corridor

July 27, 2006 4:30PM-6:30PM

Roanoke Civic Center Exhibition Hall, Parlor A



CENTRAL ROANOKE
MOBILITY STUDY



The Virginia Department of Transportation (VDOT) and the City of Roanoke welcome you to the Citizen Information Meeting about current congestion problems and future improvement needs within the Interstate 581/Route 220 Corridor.

Study Overview

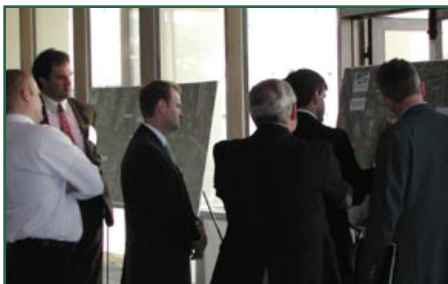
The Virginia Department of Transportation (VDOT) and the City of Roanoke are working with the engineering consulting firm of Hayes, Seay, Mattern and Mattern (HSMM) to provide a transportation needs study within the Interstate 581/Route 220 Expressway Corridor from just north of the Orange Avenue interchange to just south of the Wonju Street interchange. This study also will examine major roadways connected to and affected by the I-581/Route 220 corridor (see the study area map).

The study addresses short-term (year 2005), mid-term (year 2015) and long-term (year 2025) conditions.



The goal is to develop design concepts for possible future improvements that are highly functional, compatible with local community goals, environmentally sound and economically feasible. Both VDOT and the City of Roanoke Engineering and Planning staffs are involved and serve on the study steering committee.

Early Study Results



The Study Team analyzed existing conditions using a computer model of the major roads and intersections within the corridor. A level of service (LOS) was determined for each intersection using a scale of "A" (representing free flow conditions) to "F" (indicating

overloaded or gridlock conditions). The most congested traffic conditions were located along Orange Avenue from Williamson Road to the east, along Elm Avenue between Jefferson Street and Fourth Street, and on Colonial Avenue near Wonju Street. In addition, geometric deficiencies such as ramp curves that are too tight, short acceleration lanes, narrow shoulder widths and low bridge clearances were identified. This information was presented at a Citizen Information Meeting in October 2005, where the public was invited to comment on these findings and to identify areas needing improvement.

STUDY INFORMATION

From:

South of Wonju Street

To:

North of Orange Avenue

RFP No.

TMPD 05-01

Representatives from the Virginia Department of Transportation and the City of Roanoke are present to discuss the study and answer your questions. It is the responsibility of the VDOT to ensure that all members of the community are afforded the opportunity to participate in public decisions on transportation systems and projects affecting them. VDOT ensures nondiscrimination in all programs and activities in accordance with Title VI of the Civil Rights Act of 1964.

For further information, contact
VDOT, Salem District
Office of Civil Rights, 731
Harrison Ave., Salem, VA 24153,
or call
(540) 375-3565, toll free
(800) 611-5812, or TDD 711.

Alternatives Development Corridor Overview

The Central Roanoke Mobility Study (CRMS) area includes five interchanges, more than three miles of limited access highway and eleven bridges along Interstate 581 (north of Elm Avenue) and Route 220 Expressway (south of Elm Avenue) through this section, which passes under bridges at Elm Avenue and Brandon Avenue. This corridor provides adequate capacity to carry the current and design year mainline traffic volumes.

Although interchanges in this corridor are located close together and provide convenient access, they are difficult to use due to narrow shoulders, inadequate merge areas, short acceleration and deceleration lanes, exit and entrance ramps with curves that are too tight, and low bridge clearances. In addition, major intersections on heavily traveled arterial roads linked to the I-581/Route 220 Expressway create traffic backups onto the mainline, forcing traffic to stop and creating potentially hazardous conditions. The mainline highway and arterial roads must be considered together as a system in developing solutions to the traffic challenges in this heavily traveled corridor.

Constraints

The CRMS is primarily a traffic study and not an environmental impact study, although the numerous constraints that would be analyzed in an environmental study have been considered in developing improvement alternatives. These include:

- Historic Districts - Greater Gainsboro, Southeast, and Old Southwest
- Historic Structures – NS Freight Office, City School Admin Bldg, Former Heironimus Warehouse, Other Warehouse, Virginian Railroad Depot
- Historic Bridges – Walnut Avenue and Jefferson Street
- Parks – Elmwood Park, the Lick Run Greenway, Smith Park
- Cultural Resources – The Roanoke Civic Center
- Natural Resources – Lick Run, Roanoke River
- Railroad – Main Yard along Norfolk Avenue, Mainline along Williamson Road, Yard along the Roanoke River, Track under Wonju and crossing Route 220 Expressway
- Historic Cemetery along Orange Avenue east of I-581

These features affect the location and design of the proposed alternatives. The specific conditions at the five interchanges and the key issues driving the improvement alternatives developed are described below and on the next page:

Orange Avenue

Existing Conditions: The current interchange is a full cloverleaf with free flow in all directions and grade separation between I-581 and Orange Avenue, which provides high capacity flow without stopping traffic. However, the entrance and exit ramp curves are too tight and merge areas are too short, leading to very unstable and potentially hazardous driving conditions, especially in the southbound direction. The situation is made worse by the proximity of entering and exiting traffic from the nearby Williamson Road exit. The intersections of Williamson Road and Gainsboro Drive with Orange Avenue are very close to the end of the exit ramp, creating a difficult merge across several lanes of traffic in a short distance. Also, the vertical clearance of the I-581 bridge over Orange Avenue is nearly three feet shorter than the desirable clearance.

Solution Keys: Eliminate mainline weaving, remove or improve ramps, increase effective length between Williamson Road interchange and Orange Avenue; move ramp termini further away from adjacent intersections.

Williamson Road

Existing Conditions: This partial interchange handles northbound traffic, with an entry loop ramp northbound and a split exit ramp southbound serving both Williamson Road and Wells Avenue. Due to the proximity of the Orange Avenue exit ramp immediately north of the merge point and heavy traffic exiting eastbound, the northbound merge is a challenging maneuver, especially during peak traffic periods. The southbound exit maneuver is also difficult due to the nearby southbound entry ramp from Orange Avenue that compounds the busy merge section on the mainline.

Solution Keys: Increase weave length between Orange Avenue and Williamson Road ramps; separate or “braid” ramps to eliminate conflict; consider closing interchange to improve spacing.

Elm Avenue

Existing Conditions: The existing interchange is a simple diamond configuration with traffic signals at intersections at the end of each ramp. This interchange serves as the main access point to the Central Business District, two hospitals and several major arterial roads. The resulting high traffic volumes exceed the capacity of the interchange, creating dangerous backups onto I-581/Route 220 Expressway, especially in the southbound direction. Traffic also blocks the nearby Williamson Road/Elm Avenue intersection and the Fourth Street/Elm Avenue intersection, both of which are located much closer to the ramps than is desirable. The merge length for both the northbound and southbound entry ramps is considerably less than desired. The Elm Avenue interchange area is considered by most local residents as the single worst traffic bottleneck in the City of Roanoke.

Solution Keys: Provide more capacity for exiting traffic; increase storage length on Elm Avenue; reduce lost time due to short cycle length; restrict movements at adjacent intersections; provide free flow for heavy turn movements; evaluate alternative interchange forms.

Franklin Road

Existing Conditions: The existing partial interchange provides a southbound entrance ramp and a northbound exit ramp that passes under Franklin Road before merging in from the right side. The northbound ramp generally functions well, although the short merge length often requires entering vehicles to stop or slow significantly before an acceptable gap in traffic becomes available. This slow down is helpful in transitioning speeds to suit the mixed residential commercial character of the neighborhood, and the traffic does not back up or affect mainline operations. The southbound entry ramp is relatively steep, and the merge zone is very short, ending just north of the Roanoke River bridge. These factors create a potentially hazardous merge situation, compounded by backups from traffic exiting at the nearby Colonial Avenue exit.

Solution Keys: Lengthen the merge zone on the southbound entry ramp; remove traffic backups from Colonial that impact the merge area.

Colonial Avenue/Wonju Street

Existing Conditions: The existing interchange is a partial cloverleaf in the northbound direction with no northbound-to-eastbound exit ramp. The curve of the loop ramps and the merge length between them are less than desirable. The northbound entrance ramp merge length is also too short. In the southbound direction, an exit ramp connects to Colonial Avenue, and an exit loop serves eastbound Wonju Street. The southbound entry ramp is located at an intersection without a traffic signal just south of the Colonial Avenue/Wonju Street intersection. The merge area on Wonju Street is much shorter than desirable. The traffic using the single lane southbound Colonial Avenue exit regularly exceeds capacity, backing up traffic onto and sometimes across the Roanoke River bridge, creating a potentially dangerous condition at the nearby Franklin Road interchange merge point.

Solution Keys: Increase capacity of left turn exit at Colonial Avenue; reduce delays caused by turning traffic at 23rd Street; increase weave length or eliminate weave on Wonju; increase weave length or eliminate weave on northbound mainline; increase acceleration lane length on northbound entrance; improve capacity on Colonial Avenue; reduce through traffic on Wonju Street.

Last Chance for Input

The study team is working to create an accurate computer model of future traffic conditions. In addition to the model, the study wants to collect experiences of drivers and residents in the corridor. Early comments have been received from focus groups and are summarized on displays at this meeting. We want to add your comments and opinions as we move ahead to the recommendations phase of the study.

Next Steps

After this meeting, the Study Team will consider the information and feedback received as they select the most promising alternatives for further refinement and study. Budget-level cost estimates will be prepared for those alternatives, and more detailed concept plans will be developed. The results and recommendations will be documented in a report that will be presented to the Roanoke City Council and made available to the public. This report will serve as a guide for prioritization and funding decisions that must take place prior to detailed project development and ultimate construction of any major improvements. The final report is scheduled to be presented in December 2006.

Additional Information

Study information shared here is available for review after the meeting at VDOT's Salem District Office located at 731 Harrison Ave. in Salem, (540) 375-3565.

Written comments and other exhibits related to the study may be submitted in place of or in addition to statements made at the meeting. Such information must be postmarked or delivered to VDOT within 10 calendar days (on or before Aug. 7, 2006) of today's meeting in order to be included in the meeting transcript. Please send written comments to:

Virginia Department of Transportation
Michael Gray
Salem District Planning Manager
731 Harrison Avenue
P.O. Box 3071
Salem, VA 24153
Telephone: (540) 375-3565
TDD/TTY: 711

Please call prior to visiting to assure the availability of staff to assist you.

Office of Public Affairs
VDOT Salem District
731 Harrison Avenue
Salem, VA 24153
540-387-5493
saileinfo@VDOT.Virginia.gov



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